From:	Miller, Garyg
To:	Sanchez, Carlos
Subject:	RE: Advocates Detail Opposition To EPA"s Novel Dioxin Cleanup Proposal - Tittabawassee
Date:	Thursday, November 13, 2014 9:54:00 AM

OK – working w/ Phil on email to PRPs.

Gary Miller
EPA Remedial Project Manager
214-665-8318
miller.garyg@epa.gov

From: Sanchez, Carlos
Sent: Thursday, November 13, 2014 8:36 AM
To: Miller, Garyg
Cc: Turner, Philip
Subject: RE: Advocates Detail Opposition To EPA's Novel Dioxin Cleanup Proposal - Tittabawassee

Thanks Gary.
Is this something that we need make the PRPs aware of.
They may have or want to collect site specific data to support a higher cleanup value. CAS

Carlos A. Sanchez
Chief, Arkansas/Texas Section
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From: Miller, Garyg
Sent: Thursday, November 13, 2014 7:57 AM
To: Hayter, Earl J ERDC-RDE-EL-MS; Paul R Schroeder (Paul.R.Schroeder@erdc.dren.mil)
Cc: Turner, Philip; Sanchez, Carlos
Subject: FW: Advocates Detail Opposition To EPA's Novel Dioxin Cleanup Proposal - Tittabawassee

FYI; article below relates to the RBA factor that the PRPs proposed for San Jacinto (0.5) which they got/justified from the Michigan sites discussed in this article. EPA HQs position is that the RBA should be 1.0 (default) unless there is site-specific data to support a different number – there is no site data on RBA for San Jacinto. Using an RBA of 1.0 for San Jacinto instead of 0.5 would reduce the sediment PRG from 220 to 110 ppt.

Regards,

Gary Miller
EPA Remedial Project Manager

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From: Turner, Philip
Sent: Wednesday, November 12, 2014 12:42 PM
Subject: Advocates Detail Opposition To EPA's Novel Dioxin Cleanup Proposal - Tittabawassee

Advocates Detail Opposition To EPA's Novel Dioxin Cleanup Proposal
Posted: November 11, 2014

Environmentalists are reiterating their opposition to EPA's proposed plan for cleaning up dioxin from a Michigan river floodplain, arguing in comments to EPA that the site-specific plan's novel cleanup standards are based on faulty assumptions, fail to consider cumulative exposures and are inadequate to protect human health and the environment.

The proposed cleanup goals "are much too high to be protective" and fail to "take into account the already high dioxin body-burden in" area residents, the Lone Tree Council, a Michigan environmental group, says in recent comments.

In comments prepared by the consulting firm Environmental Stewardship Concepts, LLC, Lone Tree Council argues EPA's Aug. 12 proposed plan for cleaning up the Tittabawassee River Floodplain inappropriately focuses on non-cancer rather than cancer health risks. The group also protests the limited information that is the basis for the plan, with particular concern to its inclusion of research from the site's responsible party, Dow Chemical Company.

EPA, which is working with the Michigan Department of Environmental Quality (DEQ) on cleaning up the overall Saginaw-Tittabawassee River and Bay site, took comment on the proposed plan for cleaning up contaminated floodplain soil through Oct. 14. The floodplain cleanup is being closely watched by environmental groups who say EPA's handling of the site could set a precedent for how the agency implements its non-cancer risk estimate for dioxin, crafted in the agency's 2012 Integrated Risk Information System (IRIS) assessment.

Dioxin is a category of persistent and accumulative compounds inadvertently created through industrial incineration processes and also through the burning of trash and forest fires. It was a primary ingredient in the herbicide Agent Orange used during the Vietnam War.

Environmentalists have long urged EPA to strengthen dioxin cleanup requirements and generally praised a 50 parts per trillion (ppt) limit EPA floated following the agency's February 2012 IRIS non-cancer risk assessment of 2,3,7,8-tetrachlorodibenzo-p-dioxin, the most toxic form of the compound. That limit was significantly more stringent than the 1,000 ppt limit EPA set in 1998.

The IRIS assessment set an oral reference dose (RfD) -- or amount below which EPA expects no adverse health effects if ingested daily for a lifetime -- of 0.7 picograms per kilogram bodyweight per day (pg/kg-day). The 2012 IRIS assessment of dioxin's non-cancer risks was part of a reassessment of dioxin's health risks that agency staff has been working on for decades, though IRIS

has yet to complete the cancer portion of that assessment.

Cleanup Plan

The proposed cleanup plan for the Tittabawassee River floodplain soil also relies on the 2012 non-cancer RfD. But EPA and DEQ also considered studies of how contamination is absorbed into the bloodstream and tissues after a person is exposed in their efforts to derive site-specific non-cancer risk values. The agencies' August document on the site-specific standards also notes other factors that may limit exposures, including that dioxin levels vary widely in the river floodplain and cold weather often limits exposures to contaminated soil because the ground is frozen and people spend less time outside.

After EPA announced the proposal this summer, environmentalists told *Inside EPA* the plan's proposed cleanup standards of 250 ppt in residential areas and 2,000 ppt in other land areas, such as farms, parks, commercial properties and a wildlife refuge, showed EPA floating significantly weaker cleanup standards than the 50 ppt standard the agency estimated in 2012 and which industry groups have claimed is flawed and overly stringent.

The proposed cleanup goals are based on protecting against non-cancer risks because EPA has not yet issued the cancer values for dioxin. But in the document supporting the proposed cleanup, EPA says the site-specific cleanup levels based on the 2012 non-cancer RfD are expected to be protective of cancer risks. The agency also says that development of cancer risk information "will take some additional time, and no projected completion date is available."

Dow, the site's responsible party, declined a request seeking the company's comments on the floodplain soil cleanup, referring the request to EPA. A spokesman for EPA's Region 5 also declined the request for public comments submitted to the agency, but said the Region would provide a "responsiveness summary" when it is completed.

In a statement to *Inside EPA*, the Dow spokesman said, "we remain committed to resolution of this issue and will continue working collaboratively with the EPA, DEQ and the community."

Insufficient Evidence

In the Oct. 10 comments, Lone Tree Council argues there is insufficient evidence to merit deviating from a long-standing conservative default oral soil bioavailability factor -- or relative bioavailability (RBA) of 1, which assumes 100 percent of dioxins present in contaminated soil could interact with an animal or human that ingested the soil, causing harm.

EPA's August document on calculating the site-specific standards shows EPA set an RBA of 0.43 for use with EPA's 2012 non-cancer RfD, and that the agencies considered a Dow study of RBA of dioxin in soil in crafting the site-specific standards.

But the Lone Tree Council says "the assumptions regarding the relative bioavailability are not appropriate and at least one is illogical to the point of being arbitrary and not based on any

empirical data." Additionally, the group says that the few studies EPA cites to support use of a weaker bioavailability factor in setting cleanup goals is based on inconclusive studies that "have small sample sizes, and are largely funded by Dow, for which there is an obvious conflict of interest."

Lone Tree Council also says agency risk assessors should have considered risks from inhalation exposures, and that the agencies' proposal includes no discussion of ambient levels of dioxin, despite years of releases in the area. Additionally, the advocates urge EPA to strengthen its assessment of oral risks to account for bioaccumulation in plants and animals, including livestock.

The group says, "A high number of uncertainties exist within the risk assessment process at this site, and thus, the most conservative default assumptions should be used." -- *Dave Reynolds*